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10/588,657

08/07/2006

Glen J. Slade

34-134

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7590

03/20/2008

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EXAMINER

WITZENBURG, BRUCE A

ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/588,657	<b>Applicant(s)</b> SLADE, GLEN J.	
	<b>Examiner</b> Bruce A. Witzenburg	<b>Art Unit</b> 2169	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 64-125 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 64-125 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/07/2006</u> .   | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. Claims 65-125 are pending in this application.

### ***Information Disclosure Statement***

2. The information disclosure statement filed on 11/17/2005 is in compliance with the provisions of 37 CFR 1.97, and has been considered by the examiner. a copy is included with this office action

### ***Drawings***

3. The drawings filed on 11/17/2005 are acceptable for examination purposes.

### ***Claim Objections***

4. The following are objected to for lack of antecedent basis
  - a. "the first location" (Claim 67, line 2; Claim 68, lines 1-2; Claim 74, line 1; Claim 75, line 2; Claim 76, line 3)
  - b. "the random data" (Claim 68, line 2; Claim 70, line 2; Claim 105, line 2)  
Note basis is already lent to "the file of random data" in these cases.
  - c. "the encrypted data" (Claim 69, line 1)
  - d. "the step of using" (Claim 71, line 2; Claim 102, line 2; Claim 103. lines 1-2)
  - e. "the second location" (Claim 73, line 2; Claim 74, line 2; Claim 75, line 2; Claim 76, line 3)

- f. “the same key” (Claim 77, line 1)
- g. “the set of data” (Claim 77, line 2)
- h. “the step of storing” (Claim 78, line 1; Claim 80, line 1, Claim 84, line 1; Claim 85, line 1; Claim 86, line 1)
- i. “the same passphrase” (Claim 78, line 2)
- j. “the step of selecting (Claim 82, line 1; Claim 83, line 2)
- k. “the knowledge” (Claim 82, line 2; Claim 83, line 3)
- l. “the existing passphrases” (Claim 82, line 3; Claim 83, line 3)
- m. “the respective file index” (Claim 85, line 2; line 3; line 4; line 5)
- n. “the detection of tampering” (Claim 88, lines 2-3)
- o. “the whole of the file of random data” (Claim 89, line 2)
- p. “the file” (Claim 89, line 3)
- q. “the step of pre-processing” (Claim 90, line 1)
- r. “the step of presenting” (Claim 91, line 1;)
- s. “the location” (Claim 91, line 2; Claim 92, line 2; Claim 97, line 2; Claim 116, line 2; Claim 117, line 3; Claim 118, line 2 Claim 121, line 2, Claim 122, line 4; line 6; Claim 124, line 14)
- t. “the step of accepting” (Claim 92, line 1)
- u. “the user” (Claim 92, line 2; Claim 93, line 2; line 3; Claim 94, line 2; Claim 95, line 3; Claim 97, line 3; Claim 117, line 2, Claim 118, line 2; lines 3-4 Claim 119, line 3; Claim 121, line 3; Claim 124, line 13)
- v. “the further step of providing” (Claim 93, line 1)

- w. “the step of receiving” (Claim 94, line 1; Claim 96, line 1)
  - x. “the associated index” (Claim 97, lines 2-3)
  - y. “the step of deleting” (Claim 98, line 1)
  - z. “the step of removing” (Claim 99, line 1)
  - aa. “the respective entry” (Claim 99, lines 1-2)
  - bb. “the deleting step” (Claim 100, line 1)
  - cc. “the step of overwriting” (Claim 100, line 2)
  - dd. “the step of reorganizing” (Claim 101, line 1)
  - ee. “the overwriting step” (Claim 102, line 1)
  - ff. “the storing and execution” (Claim 105, lines 1-2)
  - gg. “the software” (claim 107, line 1; Claim 110, line 2)
  - hh. “the storage device” (Claim 107, line 2)
  - ii. “the encryption” (Claim 113, line 2)
  - jj. “the storing a file index” (Claim 115, line 4;
  - kk. “the regions of the file” (Claim 118, line 2)
  - ll. “the requested data set” (Claim 122, line 6)
  - mm. “the entry” Claim 124, line 8)
5. The following are objected to for minor informalities:
- nn. Claims 66-103, 105-114, and 116-123 for being in improper dependent form. The examiner would like to note that dependent claims should refer back to parent claims using the dependent form: “**the** [system, method apparatus] of claim ...” [emphasis added]

- oo. Claim 104 is objected to. The phrase "in which file of random data" is improper English and the phrase "in which a file of random data" should be used.
- pp. Claim 122 is objected to. The phrase "a storage device according to claim 104, the method of" Fails to give a relation between the storage device and the method. The examiner suggests "a storage device according to claim 104 wherein the storage device is configured to perform the method of [...]"

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 104-114 are directed towards descriptive material per-se and therefore do not constitute patentable subject matter. A system must be directed towards a physical embodiment with executable instructions. Because Claims 104-114 are directed towards a storage device carrying data, the claimed invention constitutes software per-se. (See MPEP 2106.01 paragraphs 3&4)

7. Claims 115-121 are directed towards descriptive material per-se and therefore do not constitute patentable subject matter. The term "for" as used in Claim 115 illustrates intended use and therefore "storing a data set [...] using the steps of: selecting [...];

encrypting [...]; making [...]; and storing [...]" are not considered to be a part of the claimed invention. (See MPEP 2106.01 paragraphs 3&4)

8. Claim 125 does not necessarily take part on a computer readable storage medium as the term "computer readable data-carrier" potentially refers to signals or propagation media. A program must be stored on a computer readable storage medium and executed by a computer (See MPEP 2106.01 paragraphs 1&2).

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 78-86 and 90-103 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 78-86 and 90-103, claims 78-86 and 90-103 are deemed indefinite because they contain steps which do not exist as a subset of steps from claim 64. The order of execution and interaction of such steps when combined with the steps of claim 64, is indefinite and thus renders the claim indefinite.

The following is a quotation of the fourth paragraph of 35 U.S.C. 112:

Subject to the following paragraph, a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

10. Claims 67 and 69 are rejected under 35 U.S.C. 112, fourth paragraph, as failing to further limit the claimed subject matter

Regarding claim 67, claim 64 from which claim 67 depends discloses the encrypted file index being stored at the first location. (Note that in a computer system a location would inherently be an exact location so being stored "directly" is inherent as disclosed.) For this reason claim 67 fails to further limit claim 64 from which it depends and thus is rejected under 35 U.S.C. 112 4<sup>th</sup> paragraph

Regarding claim 69, claim 64 from which claim 69 depends discloses encrypted data being stored at the second location. (Note that in a computer system a location would inherently be an exact location so being stored "directly" is inherent as disclosed.) For this reason claim 69 fails to further limit claim 64 from which it depends and thus is rejected under 35 U.S.C. 112 4<sup>th</sup> paragraph

Regarding claim 107, claim 104 from which claim 107 depends from discloses at least "encrypting file indexes." Because claim 104 carries out "at least one of the following steps" within claim 107, claim 107 fails to further limit claim 104 from which it depends and thus is rejected under 35 U.S.C. 112 4<sup>th</sup> paragraph.



***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims are rejected under 35 U.S.C. 103(a) as being unpatentable over Orrin (US 6,011,849) hereafter Orrin, and further in view of Wang et al. (US 4,587,633)

Hereafter "Wang"

Regarding claim 64, Orrin discloses a method of storing a data set on a storage device carrying a file of random data comprising the steps of: selecting, based upon a user input passphrase, a first location within the file of random data for storing data; (Abs, lines 5-8; Col 4, lines 7-8; Col 5, line 57 - Col 6, line 8 Note that multiple locations are selected including a first and second location for data)

selecting a second location within the file of random data for storing additional data; encrypting the additional data; (Col 5, line 57- Col 6, line 8)

storing the encrypted additional data at the second selected location in the file of random data; (Col 5, line 57- Col 6, line 8). Orrin does not disclose data being in a file system including an index, however file systems for tracking and storing multiple files are well known in the art at the time of the invention as demonstrated by Wang (Col 11,

lines 50-68) and it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Orrin with the teachings of Wang to encrypt and store multiple files within a file system in order to expand storage capabilities while remaining hidden.

Regarding claim 65 Orrin discloses a method of operating a computer to store a data set on a storage device carrying a file of random data, the method comprising the steps of: selecting, in dependence on a user input passphrase, a first location within the file of random data for storing data; (Abs, lines 5-8; Col 4, lines 7-8; Col 5, line 57 - Col 6, line 8 Note that multiple locations are selected including a first and second location for data) selecting a second location within the file of random data for storing additional data; (Col 5, line 57- Col 6, line 8)

encrypting the additional data; (Col 5, line 57- Col 6, line 8)

storing the encrypted additional data at the second selected location in the file of random data; (Col 5, line 57- Col 6, line 8) Orrin does not disclose data being in a file system including an index, however file systems for tracking and storing multiple files are well known in the art at the time of the invention as demonstrated by Wang (Col 11, lines 50-68) and it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Orrin with the teachings of Wang to encrypt and store multiple files within a file system in order to expand storage capabilities while remaining hidden.

Regarding claim 66, Orrin as modified discloses the step of selecting the first location for storing the file index comprising the step of selecting the first location as a start point of the file index. (Abs; Col 5, line 57- Col 6, line 8)

Regarding claim 67, claim 67 is rejected for substantially the same reason as claim 64 above

Regarding claim 68, Orrin as modified discloses the file index being stored at the first location in the file of random data by processing the random data using the encrypted file index. (Abs)

Regarding claim 69, claim 69 is rejected for substantially the same reason as claim 64 above.

Regarding claim 70, Orrin as modified discloses the data set being stored at the second selected location in the file of random data by processing the random data using the encrypted data set. (Abs; Col 5, line 57- Col 6, line 8)

Regarding claim 71 Orrin as modified discloses the step of using the user input passphrase for generating a key for encrypting the file index. (Col 4, lines 7-8)

Regarding claim 72, claim 72 is rejected for substantially the same reason as claim 71 above.

Regarding claim 73, claim 73 is rejected for substantially the same reason as claim 64 above.

Regarding claim 75, claim 75 is rejected for substantially the same reason as claim 64 above.

Regarding claim 76, claim 76 is rejected for substantially the same reason as claim 64 above.

Regarding claim 77, Orrin as modified discloses the same key is used for encrypting the set of data as is used for encrypting the file index. (Abs) note that data in this case includes the file system and files and would use the same key for encrypting

Regarding claim 78, claim 78 is rejected for substantially the same reason as claim 77 above. Additionally note that the filesystem is capable of storing any amount of data.

Regarding claim 79. Orrin as modified discloses a respective location for each data set being selected, each data set being encrypted and stored at the respective location,

(Orrin, Abs; Col 5, line 57- Col 6, line 8) and respective entries being added to the file index. (Wang, Col 11, lines 50-68)

Regarding claim 80, Orrin does not disclose the step of storing further file indexes within the file of random data, each of which indexes is associated with a respective passphrase and each of which indexes is encrypted and is stored at a location selected in dependence on the respective passphrase, however it would have been obvious to one of ordinary skill in the art at the time of the invention to use a further encryption key to provide additional data storage with different access privileges. It should be noted the above combination is the combination of Orrin as modified with itself.

Regarding claim 81, claim 81 is rejected for substantially the same reason as claim 80 above.

Regarding claim 82, claim 82 is rejected for substantially the same reason as claim 80 above. Additionally it should be noted that a primary user or administrator of the system would know the existing passphrases.

Regarding claim 83, claim 83 is rejected for substantially the same reason as claim 82 above.

Regarding claim 84, claim 84 is rejected for substantially the same reason as claim 80 above. Additionally it should be noted that a secondary user of the system would not necessarily know all of the existing passphrases.

Regarding claim 85, claim 85 is rejected for substantially the same reason as claim 80 above.

Regarding claim 86, Orrin discloses storing data on a storage device carrying a plurality of files of random data. (Col 4, line 64 – Col 5, line 10)

Regarding claim 87, Orrin as modified discloses the file index comprising a message authentication code. (Col 7, lines 29 - 41)

Regarding claim 88, claim 88 is rejected for substantially the same reason as claim 87 above.

Regarding claim 89, claim 89 is rejected for substantially the same reason as claim 87 above.

Regarding claim 90, Orrin discloses pre-processing the data set prior to encryption. (Col 6, lines 19-20. Note characters are selected before encryption begins)

Regarding claim 98, Orrin as modified discloses the step of deleting a data set stored on a storage device. (Col 7, lines 19-28)

Regarding claim 99 Orrin as modified discloses the step of removing the respective entry from the file index. (Col 7, lines 19-28)

Regarding claim 100, Orrin as modified discloses the deleting step comprises the step of overwriting the data set with random data as well as removing the entry from the file index. (Col 7, lines 19-28)

Regarding claim 101, claim 101 is rejected for substantially the same reason as claim 98 above.

Regarding claim 102, claim 102 is rejected for substantially the same reason as claim 100 above.

Regarding claim 103 claim 103 is rejected for substantially the same reason as claim 100 above.

Regarding claim 104, claim 104 is rejected for substantially the same reason as claim 64 above.

Regarding claim 105, claim 105 is rejected for substantially the same reason as claim 104 above.

Regarding claim 106, claim 106 is rejected for substantially the same reason as claim 104 above.

Regarding claim 107, claim 107 is rejected for substantially the same reason as claim 104 above. (Note that claim 104 does carry out “at least one of the following steps”)

Regarding claim 108, Orrin as modified discloses carrying of a conventional file allocation table (Wang Col 11, lines 50-68, Note that file indexes generally show what space is allocated to them and additionally note that file allocation tables were well known in the art at the time of the invention and it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the above teachings to use a file allocation table to manage a multiple file encryption system.)

Regarding claim 109, Orrin as modified discloses a portion of Read Only Memory (ROM). (Col 8, lines 41-44 Note that CD ROMs are read-only)



Regarding claim 110, claim 110 is rejected for substantially the same reason as claim 109 above. (Note that Orrin as modified storing information on the CD-ROM includes file indexes and all other information as shown previously)

Regarding claim 111, Orrin discloses a removable storage device. (Col 8, lines 41-44)

Regarding claim 114, claim 114 is rejected for substantially the same reason as claim 64 above. Note the device of Orrin as modified comes with the software described.

Regarding claim 115, claim 115 is rejected for substantially the same reason as claim 64 above.

Regarding claim 64, Orrin discloses a method of storing a data set on a storage device carrying a file of random data comprising the steps of: selecting, based upon a user input passphrase, a first location within the file of random data for storing data; (Abs, lines 5-8; Col 4, lines 7-8; Col 5, line 57 - Col 6, line 8 Note that multiple locations are selected including a first and second location for data)

selecting a second location within the file of random data for storing additional data; encrypting the additional data; (Col 5, line 57- Col 6, line 8)

storing the encrypted additional data at the second selected location in the file of random data; (Col 5, line 57- Col 6, line 8). Orrin does not disclose data being in a file system including an index, however file systems for tracking and storing multiple files

are well known in the art at the time of the invention as demonstrated by Wang (Col 11, lines 50-68) and it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Orrin with the teachings of Wang to encrypt and store multiple files within a file system in order to expand storage capabilities while remaining hidden.

Regarding claim 122, Orrin as modified discloses a method of extracting data comprising the steps of: accepting a user input passphrase; (Abs, lines 5-8; Col 4, lines 7-8; Col 5, line 57 - Col 6, line 8 Note that multiple locations are selected including a first and second location for data)  
determining the location for a file index indicated by the passphrase; (Abs, lines 5-8; Col 4, lines 7-8; Col 5, line 57 - Col 6, line 8)  
decrypting the file index; ((Abs, lines 5-8; Col 4, lines 7-8; Col 5, line 57 - Col 6, line 8 Note that the implementation concerns both encryption and decryption)  
identifying the location of the requested data set from the file index; (Abs, lines 5-8; Col 4, lines 7-8; Col 5, line 57 - Col 6, line 8)  
and decrypting the data set. (Abs, lines 5-8; Col 4, lines 7-8; Col 5, line 57 - Col 6, line 8)

Regarding claim 123, claim 123 is rejected for substantially the same reason as claim 122 above.

Regarding claim 125, claim 125 is rejected for substantially the same reason as claim 64 above.

12. Claim 74 is rejected under 35 U.S.C. 103(a) as being unpatentable over Orrin, in view of Wang and in further view of Coppersmith et al. (US 5,454,039) hereafter Coppersmith

Regarding claim 74, Orrin as modified discloses inputting a key for use in encryption, however he does not disclose using a hashing function on user input to generate a key. Coppersmith discloses using a hashing function based on a user input password (Col 4, lines 2-22; Col 10, lines 49-65). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Orrin as modified with the teachings of Coppersmith in order to provide encryption security based upon a pseudorandom hashed number instead of a base password to provide a more stable encryption system.

13. Claims are rejected under 35 U.S.C. 103(a) as being unpatentable over Orrin, in view of Wang and in further view of "StegFS: A Steganographic File System" HweeHwa Pang, Kian-Lee Tan, Xuan Zhou, hereafter Pang

Regarding claim 91, Orrin as modified does not disclose the step of presenting a user with an indication of the location within the file of random data that will be selected for the file index when using a predetermined passphrase, however Pang discloses presenting a user with an indication of the location within the file of random data that will be selected for the file index when using a predetermined passphrase (Pg 660, Right col, line 33 – Pg 661, Left col, line 36) It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Pang with the teachings of Orrin as modified to support multiple users within the steganographic file system.

Regarding claim 92, claim 92 is rejected for substantially the same reason as claim 91 above

Regarding claim 93, claim 93 is rejected for substantially the same reason as claim 91 above

Regarding claim 94, claim 94 is rejected for substantially the same reason as claim 91 above

Regarding claim 95, claim 95 is rejected for substantially the same reason as claim 91 above

Regarding claim 96, claim 96 is rejected for substantially the same reason as claim 91 above

Regarding claim 97, claim 97 is rejected for substantially the same reason as claim 91 above

Regarding claim 116, claim 116 is rejected for substantially the same reason as claim 91 above

Regarding claim 117, claim 117 is rejected for substantially the same reason as claim 91 above

Regarding claim 118, claim 118 is rejected for substantially the same reason as claim 91 above

Regarding claim 119, claim 119 is rejected for substantially the same reason as claim 91 above

Regarding claim 120, claim 120 is rejected for substantially the same reason as claim 91 above

Regarding claim 121, claim 121 is rejected for substantially the same reason as claim 91 above

124. (new) A method of storing a data set on a storage device carrying a file of random data comprising the steps of: selecting, in dependence on a user input passphrase, a first location within the file of random data for storing a file index; (Abs, lines 5-8; Col 4, lines 7-8; Col 5, line 57 - Col 6, line 8 Note that multiple locations are selected including a first and second location for data)

selecting a second location within the file of random data for storing the data set; (Abs, lines 5-8; Col 4, lines 7-8; Col 5, line 57 - Col 6, line 8 Note that multiple locations are selected including a first and second location for data)

encrypting the data set; (Col 5, line 57- Col 6, line 8)

storing the data set at the second selected location in the file of random data; (Col 5, line 57- Col 6, line 8)

Orrin does not disclose data being in a file system including an index, however file systems for tracking and storing multiple files are well known in the art at the time of the invention as demonstrated by Wang (Col 11, lines 50-68) and it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Orrin with the teachings of Wang to encrypt and store multiple files within a file system in order to expand storage capabilities while remaining hidden.

Orrin also does not disclose giving an indication of the location within the file of random data that will be selected, however Pang discloses giving such an indication. (Pg 660, Right col, line 33 – Pg 661, Left col, line 36) It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Pang with the teachings of Orrin as modified to support multiple users within the steganographic file system.

Regarding claim 112, Orrin does not disclose a storage device having a unique serial number, however Pang discloses a randomly generated key. (Pg 660, Left col, lines 33-47) Additionally, serial numbers are well known in the art at the time of the invention and it would have been obvious to one of ordinary skill in the art to use a serial number to help identify a hardware or other physical device of Orrin as modified.

Regarding claim 113, Orrin does not disclose a storage device which carries a unique hard coded identifier which is used in at least one of the encryption and decryption process, however Pang discloses a storage device carrying a unique identifier (Pg 660, Right col, lines 33-47)

### ***Conclusion***

The prior art made of reference in this case is as follows:

- a. Orrin (US 6,011,849)
- b. Wang et al. (US 4,587,633)
- c. Coppersmith et al. (US 5,454,039)
- d. “StegFS: A Steganographic File System” HweeHwa Pang, Kian-Lee Tan,  
Xuan Zhou

The prior art made of record but not relied upon is considered pertinent to the applicant’s disclosure is as follows:

- e. Moskowitz et al. (US 5,687,236)
- f. Moore (US 5,838,814)
- g. Van Wie et al. (US 5,943,422)
- h. Rhoads (US 6,122,403)
- i. Ginter et al. (US 6,185,683)
- j. Rhoads (US 6,278,781)
- k. Hillhouse (US 6,052,468)
- l. Lim et al. (US 2003/0126434)
- m. Van Wie et al. (US 6,449,367)
- n. “The Steganographic File System” Ross Anderson, Roger Needham, Adi  
Shamir



- o. "StegFS: A Steganographic File System for Linux" Andrew D. McDonald,  
Markus G. Kuhun

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRUCE A. WITZENBURG whose telephone number is (571)270-1908. The examiner can normally be reached on M-F 9:00 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on 571-272-3978. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BW

/E. P. L./

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10/588,657  
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